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GEOGRAPHICAL RECORD

NORTH AMERICA

NEW YORK AND THE FOUR NEXT LARGEST AMERICAN CITIES IN 1910. According to the 1910 Census the growth of New York exceeds anticipation. The city at the Hudson mouth has now over 5,000,000 inhabitants in the four municipalities, New York, Jersey City, Hoboken and Newark. Furthermore it has gained over 1,500,000 since 1900. The city is still smaller than London, but its growth is over twice as rapid, and it will probably outgrow London in the next decade. A year ago it was pointed out (*Bulletin*, Sept., 1909) that there were in the real, closely settled, contiguous city in 1900, 3,636,000 people, after subtracting 330,000 inhabitants of thinly settled areas within the corporate limits that are not properly "city." The official figures of 1910 for the four political units are New York, 4,766,883; Jersey City, 267,779; Hoboken, 70,324; and Newark, 347,469, a total of 5,452,455. As some of the outer parts of the area have now the 10,000 to the square mile that has been used as the limiting value of "city" density, the sum to be subtracted now from the totals for included suburban dwellers is very likely less than in 1900. If we reduce the total above by that number, 330,000, we may confidently say that the real size of New York (anthropographic city) is over 5,120,000.

Chicago, which in 1900 had 1,500,000 people, with an allowance of 199,000 suburban dwellers, has now, making the same allowance, over 1,986,000 people, say 2,000,000.

Philadelphia with Camden, allowing 230,000 suburbanites then and now, had 1,142,000 in 1900 and now 1,413,000, a million and a half.

Boston and its contiguous neighbors, Cambridge, Somerville, Chelsea and Brookline, had 681,000 ten years ago and this year 826,000, after subtracting 87,000 for suburbs in both years.

St. Louis, which is, like Chicago, including everything citified in its neighborhood, had half a million in 1900 and now has 612,000[†]. 75,000 was subtracted for suburbs each time.

It was hoped by Director Durand of the Census to map the population densities in the larger cities in very small units, at times a city block. When these figures become available we shall have the best basis ever attained for the study of city population—density. For the present we may say that the five largest anthropographic or really urban cities in the United States in 1910 are:

New York*	5,120,000	growth	148,000	a year.
Chicago	2,000,000	"	49,000	"
Philadelphia*	1,410,000	"	27,000	"
Boston*	830,000	"	15,000	"
St. Louis	610,000	"	11,000	"

The starred cities include contiguous cities. The rates of increase estimated last year for the same places were in round thousands per year 119, 52, 26, 15,

[†] A misprint at page 566 of the *Bulletin*, 1900, made the anthropographic population of St. Louis in 1900, 575,000. Another, at page 540, gave Philadelphia officially 1,648,000, which should have been 1,293,697.

10. The last four are pretty much as estimated but New York's increase is twenty-four per cent. greater than was then anticipated.

M. J.

FUTURE WHEAT SUPPLY. In a paper on "The Future Wheat Supply of the United States," by M. A. Carleton of the U. S. Dep't. of Agriculture (*Science*, Aug. 5, 1910, pp. 161-171), the author gives data which seem to point to the conclusion that from 75,000,000 to 100,000,000 acres will be added to the farm area of the United States, exclusive of Alaska, from the 386,873,787 acres of government lands "unappropriated and unreserved" in 1908 and by additions from present Indian reservations, "unalotted and unreserved," at the close of the fiscal year, 1908. With the natural expansion of farm area in the older states, which will be greater hereafter than heretofore, it seems reasonable to expect 250,000,000 to 300,000,000 acres of additional farm area within the next thirty years. By 1950, therefore, a conservative estimate would make the total farm area of the country more than 1,300,000,000 acres. The average proportion of farm area used for wheat since 1870 has been 5.2 per cent., and this percentage of the future possible farm area would be over 69,000,000 acres, or 22,000,000 acres more than the acreage of 1909.

But the tendency of the wheat acreage is now to increase in the same farm area and, long before 1950, it should again reach 6 per cent. as it did before the wheat depression in the nineties, both because of wheat growing expansion due to increase in prices and because the farm area will hereafter increase less rapidly. In 1910 the wheat acreage is 50,500,000 acres. In 1950, at the rate of 6 per cent. increase, the wheat acreage should be about 80,000,000 acres. The yield of wheat, per acre, is increasing and within the past 30 years the increase has been fully two bushels per acre. Other considerations are also adduced to show that improvements in varieties of wheat, in methods of farming, etc., may raise the yield by 1950, to twenty bushels to the acre, 80,000,000 acres of wheat thus producing 1,600,000,000 bushels.

Basing his estimate of increase of population upon the ratio of increase since 1880, Mr. Carleton assumes that the census will show 160,000,000 inhabitants in 1950, requiring, at the rate of seven bushels of wheat per capita, 1,120,000,000 bushels, leaving a surplus of 480,000,000 bushels. By a similar line of reasoning, he figures that the world will require by 1950, about 5,500,000,000 bushels of wheat, an increase of 2,000,000,000 bushels over present production. The estimated total increase of production will more than fill this requirement. All of Mr. Carleton's estimates and assumptions are well fortified by data relating to increase of population and increase of wheat production and consumption and his paper is a valuable and suggestive contribution to this vital topic.

MACKENZIE MOUNTAINS. In a recent publication of the Geological Survey of Canada* J. Keele introduces a new name in the nomenclature of the Rocky Mountain System. He wishes to designate by "Mackenzie Mountains" the entire mountainous region forming the water-parting between the upper Yukon and the upper Liard, on one side, and the Mackenzie, on the other, and extending in an arc convex to the northeast from the sources of the Porcupine River in $65\frac{1}{2}^{\circ}$ N. to the bend of the Liard River in $59\frac{1}{2}^{\circ}$ N. The Mackenzie Mountains would, therefore, be coincident with the Ogilvie and Selwyn Ranges as defined by the undersigned in a recent paper.† Keele wishes the comprehensive

* A Reconnaissance across the Mackenzie Mountains on the Pelly, Ross and Gravel Rivers, by J. Keele, 1910. [No. 1297]. p. 13.

† *Bull. Amer. Geog. Soc.*, Vol. XLII (1910), pp. 176-177.

term to supersede the two distinct names (which he as well as other members of the Survey staff have used in previous reports) because "it has been found impossible to define the limits of these subdivisions, on topographic grounds." He, however, retains the name Selwyn Mountains (in this form) for that part of the Mackenzie Mountains in which the upper branches of the Macmillan and Ross Rivers head. (*cf.* the map accompanying the report.) To the Ogilvie Range he does not wish to assign definite limits; the name, however, appears on the map accompanying the report near the Arctic-Pacific watershed at the head of the Stewart River.

Although these names can only be considered tentative, and no nomenclature laying any claim to finality is possible before we possess a far more thorough knowledge of the region, all such efforts to define geographic units are to be welcomed because of the clearer conception they lead to of the relations of the parts to the whole. Thus, whatever their name, Keele recognizes the Mackenzie Mountains as a northern member of the Rocky Mountain System. Whether the term should be made to include the whole width of this portion of the Rocky Mountain System between the Central Plateau Region and the basin of the Mackenzie River, or whether it should merely be applied to the outer, or eastern, belt of the System, as the region of low relief lying northeast of the course of the Pelly River and separated from the main body of the Central Plateau Region by the Glenlyon and Pelly Mountains would seem to indicate, cannot at present be decided.

W. JOERG.

DENUDATION IN THE UNITED STATES. Messrs. R. B. Dole and H. Stabler have a paper in Water Supply Paper 234 entitled "Denudation" in which they present estimates of the rate of denudation in the United States. The computation of denudation factors are based on figures representing the amount of mineral matter carried by streams, the size of the areas tributary to the streams, and the quantity of stream water discharged. The sources of data are discussed and the summary presents in tabular form denudation estimates for the primary drainage basins and for the whole country.

"The tons per square mile per year removed from different basins present interesting comparisons. In respect to dissolved matter, the southern Pacific basin heads the list with 177 tons, the northern Atlantic basin being next with 130 tons. The rate for Hudson Bay basin, 28 tons, is lowest; that for the Colorado and western Gulf of Mexico, basins, is somewhat higher. The amounts are generally lowest for streams in the arid and semi-arid regions, because large areas there contribute little or nothing to the run-off. The southern Pacific basin is an important exception to this general rule, presumably because of the extensive practice of irrigation in that region. The amounts are highest in regions of high rainfall, though usually the waters in those sections are not so highly mineralized as the waters of streams in arid regions.

"Colorado river brings down the most suspended matter, 387 tons per year for each square mile of its drainage basin. Practically no suspended matter is transported by St. Lawrence river. The Mississippi apparently discharges more material than is brought in by its tributaries, thus indicating that its lower valley is still being eroded.

"The estimates reveal that the surface of the United States is being removed at the rate of thirteen ten-thousandths of an inch per year, or one inch in 760 years. Though this amount seems trivial when spread over the surface of the country, it becomes stupendous when considered as a total, for over 270,000,000

tons of dissolved matter and 513,000,000 tons of suspended matter are transported to tide water every year by the streams of the United States. This total of 783,000,000 tons represents more than 350,000,000 cubic yards of rock substance, or 610,000,000 cubic yards of surface soil. If this erosive action had been concentrated upon the Isthmus of Panama at the time of American occupation, it would have excavated the prism for an 85 foot level canal in about seventy-three days."

THE PAN AMERICAN UNION. The name of The International Bureau of the American Republics has been changed to "The Pan American Union." Its monthly publication has the name "*Bulletin of the Pan American Union*," from the October number.

STATE GEOLOGICAL SURVEY OF TENNESSEE. The legislature of Tennessee provided for the organization of this survey at its last session. Under the law, a State Geological Commission was appointed consisting of the Governor, the Commissioner of Agriculture, the Chief Mine Inspector, the President of the University of Tennessee, the Chancellor of Vanderbilt University and the Vice Chancellor of the University of the South. The Commission has elected Mr. George H. Ashley as State Geologist. He was formerly connected with the U. S. Geological Survey. Mr. L. C. Glenn and Mr. C. H. Gordon have been chosen as associate geologists. By working, like several of the other state surveys, in cooperation with several of the national bureaus, the total product of the field studies will be greatly enlarged. Besides the accumulation of geological data the survey will give special attention to the study of the natural resources of the state. It is expected to issue Bulletins as fast as work is completed.

TWENTY-FIVE YEARS OF THE BLUE HILL METEOROLOGICAL OBSERVATORY. This private, scientific establishment, founded and supported by A. Lawrence Rotch, has now been in existence a quarter of a century. The occasion is improved by the *Technology Review* to print a short paper on the Observatory and its work (Vol. xii, No. 2). It has made a continuous record of the meteorological phenomena, at its elevation of 635 feet, and has long been engaged in the study of the upper air by means of kites. It was one of the first of our stations to be equipped with self-recording instruments, is one of the few in the world where nearly every element is continuously recorded, no other station has studied the upper and lower air so long, many new types of instruments have been made and the long labors and results of Mr. Rotch and his able staff have everywhere commanded attention. While the observatory is still independent of outside control, it is attached to Harvard University and publication is made in the *Annals of the Astronomical Observatory*.

PROMOTIONS. J. Paul Goode and H. H. Barrows, geographers of the University of Chicago, have been promoted from the position of Assistant Professors to be Associate Professors.

AFRICA

THE FRENCH GUINEA RAILROAD COMPLETED TO THE UPPER NIGER. The railroad which, for some years, has been building across the French Guinea Colony was completed, on Sept. 15, to Kouroussa on the upper Niger. It will now be extended about 100 miles further southeast to Kankan. The route extends inland from Konakry, the chief port and capital of the colony. This enterprise will be of great importance in the development of the large resources of French Guinea.

ASIA

FAILURE OF THE CHINESE CENSUS. According to the "Ostasiatische Lloyd," as reported in *Globus* (vol. xcvi, No. 4), the attempt of the Peking government to enumerate the population in the first year of the new Emperor, is practically a failure. The populace feared that the census was to form the basis for the imposition of new taxation and refusal to give information was general. The enumeration was fairly successful only in the treaty ports and the chief cities and no returns of any sort were received from four of the provinces. Furthermore, no one without a fixed abiding place was counted and so the vast number of boatmen, coolies, wheelbarrow men, beggars, etc., were not enumerated. Under the circumstances, the figures published by the government have very little value.

DR. SVEN HEDIN'S SCIENTIFIC RESULTS. The scientific results of Dr. Hedin's journey in Tibet (1906-08) will consist of three volumes of memoirs and an atlas in two volumes. The text will embrace about 1,500 pages and will comprise reports on geographical discoveries and observations, memoirs on the physical geography of Tibet and papers by Dr. Hennig on geology, Prof. Lagerheim, Dr. Ostenfeld and others on botany, Dr. Olsson on astronomical observations and Dr. Ekholm on meteorology and hypsometry. It is expected that the memoirs will appear in 1911, 1912 and 1913 and the Swedish government has voted 75,000 kroner towards the cost of publication. Dr. Hedin's detailed map of Tibet on a scale of 1:1,000,000, will appear in 1912.

JAPANESE WHALERIES. Since the Russo-Japanese war, the whaling industry, formerly flourishing in Japan and Corea, has had a great revival in both countries. Japanese whaling vessels, in the year ending September, 1908, captured 1,784 whales of a value of \$1,200,000. The most southern of the whaling ports is Hososhima, in the province of Hyuga and the most northern is the island of Kinkasan, to the northeast of Sendai, on the east coast of Nippon. The whaling stations of Corea are at Oul-san on the southeast coast and near Wön-san on the east coast. Seven companies are engaged in the business, the largest of which hunts the whale in the Pacific and on the east coast of Corea. The government now authorizes whaling as far as the south end of Formosa where these animals are said to be abundant. Japan proposes to adopt strict rules to prevent the extermination of the whales.

OBITUARY

PROFESSOR WILLIAM H. NILES. Prof. Niles died on Sept. 13 at the age of 72 years and 3 months. He was professor of geology and geography in the Institute of Technology, Boston, from 1871 to 1902 and had been the head of the department of geology at Wellesley College since 1888. Well known as a teacher and lecturer, he was also conspicuous as the author of papers on glacial phenomena and on the geology and physical geography of Massachusetts. He was president of the Boston Natural History Society from 1892 to 1897.

PROFESSOR Z. CONSIGLIERI PEDROSO. The Society regrets to announce the death of Professor Pedroso, President of the Geographical Society of Lisbon, of which event it is informed by a communication from that Society under date of Sept. 3d, ult.

PROF. DR. THEOBALD FISCHER. Prof. Dr. Theobald Fischer, professor of geography at the University of Marburg, Prussia, is dead at the age of 64. He was a geographer and teacher of wide reputation.